

Defense Industry International Cooperation Between Pt Dirgantara Indonesia and Air Defense and Space In Improving Indonesian Air Power

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Abstract:

Since 2000, PT Dirgantara Indonesia (PTDI) carried out two cooperation units, namely rotary-wing and fixed-wing, as part of ADS. Fixed-wing unit PTDI cooperates with Airbus Military, while the rotary-wing unit cooperates with Airbus Helicopter. In international cooperation, PTDI aims to increase capability and capacity through the Transfer of Technology (ToT) and assets. However, the cooperation of the PTDI urotaryotar- wing is not as significant as the fixed-wing in achieving the goal of working with ADS. The value of the resulting benefits is also different in increasing air defense power. This raises the question, how does PTDI carry out international cooperation in the defense industry between PTDI and ADS was capable of increasing air defense power? The interlocking dynamics in a series of international cooperation processes are analyzed through a systems approach within the realism theoretical framework. This study indicates that the development of air defense forces does not accompany cooperation in increasing capabilities and capacities following cooperation objectives. Cooperation in the development of air defense forces is also insignificant, with differences in benefits, implications, and constraints. The achievement of the objectives is greatly influenced by the study and detail of the pre-negotiation carried out because of the constraints, pre-negotiation, negotiation, and implementation that are interconnected in the form of a domino effect.

Keywords: international cooperation, defense industry, cooperation process system

INTRODUCTION

Fighting for national interests is the background for countries to work together while still prioritizing mutual respect for the interests of cooperating countries so that conflicts can be prevented (Keohane, 1984: 3; Herbert, 1996: 226). The perception of security has caused Southeast Asian countries to increase military spending with large weapon acquisitions, through imports from European countries and the United States in the last five years. Wezeman et al (2020) stated that there has been an increase in military budgets from regional and global countries caused by conditions of global or regional environmental insecurity that threaten the national security of a country. According to Balakrishnan & Bitzinger (2012), almost 90 percent of the defense equipment of ASEAN countries comes from abroad, especially from the United States and Western Europe. The oligopoly situation that leads to monopoly creates a unipolar structure tendency in the procurement of this defense equipment, especially in the field of air defense power. There is a tendency for hierarchical nature with a unipolar structure carried out by developed countries, while the 3rd countries want a multipolar structure in international cooperation in the defense industry (Buzan & Wæver, 2003; Dilahwangsa et al., 2019). Indonesia's free and active foreign policy is a challenge in establishing defense industry cooperation relations because of this impartiality.

In the meeting of the Defense Ministers of the 4th ASEAN countries in Hanoi, the ASEAN Defense Industry Collaboration (ADIC) was formed in 2011 as a concrete step in cooperation in developing the defense industry of ASEAN countries. Dependence on

weapons technology has led to the hegemony of producing countries, which at times cannot operate these weapons. The reason could be the lack of spare parts and up-to-date engineering improvements that were embargoed. On the technical aspect, there is no common view in determining the weapons technology platform, doctrine, and organization between ADIC members which makes this organization ineffective (Ningsih, 2017; 2019). In line with Ningsih (2019), Balakrishnan & Bitzinger (2012) state that ADIC has not made much significant progress, due to the lack of complementary attitudes among the defense industries of ASEAN countries. In addition, in general, ASEAN governments and militaries cover each other about their respective defense technologies. In addition, Salsabiela (2016) stated that differences in the capacity and capability of the defense industry have the potential to create obstacles and risks in the technical cooperation of the ADIC defense industry. In the context of implementation capacity, the success of defense industry cooperation must include a willingness to complement each other towards a common capacity (Calcara, 2018; Ningsih, 2019).

Indonesia's international defense cooperation is only oriented toward the fulfillment of defense tools (Wie, 2005; Yogaswara, 2011). PT Dirgantara Indonesia (PTDI) international cooperation with Airbus Defense and Space (ADS) begins with the procurement of aircraft. This shows that PTDI was placed by the government as an independent aviation manufacturer. Procurement transactions occur between consumers and producers, where the government as a consumer and PTDI as a producer have their respective bargaining rights. The transaction for the procurement of defense equipment with a G to B (Government to Business) structure is by presidential regulation number 16 of 2018 concerning the procurement of goods and services. Meanwhile, PTDI's relationship with ADS is wrapped in an international cooperative relationship with a B to B (Business to Business) structure. The offset that is commonly carried out is only ToT (Transfer of Technology) in the form of education and training in terms of how to operate and maintain, which means that it does not involve the defense industry such as PTDI. It shows that initially, PTDI's capabilities were not in the field of full combat aircraft. Therefore, it is important to analyze the threat and how to overcome it, structure the organization, calculate the capability and air power needed, and how provide logistical support.

Political influence dominates over economics when a country cooperates internationally in developing or building a full combatant aircraft industry. International relations through the political balance of military power and national security as shown by the West-United States bloc with NATO and the East-former Soviet Union with its Warsaw Pact until the fall of the Berlin wall in 1989. Afterward, the issue of the balance of military power shifted in the direction of political-economic cooperation and the United States is the sole power (Keohane, 1984: 49; Herbert, 1996: 227). As stated by Cleverley (2007), the structural-hegemonic conditions that the United States has always created allow countries to depend on the United States either directly or indirectly.

Reform activities in 1998 by the Indonesian people led to the expansion and reach and participation in international cooperation interactions. Globalization along with the development of information and communication technology has made a very strong factor in the involvement of decentralized non-state actors (subnational state actors and non-state actors), such as; MNCs, INGOs, foundations, and individuals. The international cooperation platform is no longer centralized (national state actor). It can be interpreted that harmonization of international cooperation can be realized by bringing the potential

advantages of each country working together in the economic aspect by synchronizing the relative costs of each country's product. It is more efficient, which each country will carry out international activities according to its best ability in certain products. Awareness of the needs and shortcomings of a country chooses a unipolar or multipolar structure in establishing cooperation (Kaufman & Daniel, 1985).

The similarity of political and economic views between state actors in international defense cooperation and supported by good relations with state figures can influence decisions in developing a country's defense industry (Creasey & May 1988: 20). An interesting phenomenon to be discussed is when the economic and political sensitivity of the defense aspect does not hinder PTDI's cooperation with ADS. On the Indonesian National Armed Forces (TNI) site as an end-user, they assume that the PTDI product in collaboration with ADS does not meet the expected performance. However, the sustainability of PTDI's collaboration with ADS as the implementation of the outcome remains harmonious. Researchers are interested in analyzing this situation.

LITERATURE REVIEW

International cooperation can occur due to differences in interests and needs where each cooperating country can complement each other by considering potential resources to increase the country's bargaining value with the other (mutual adjustment). International cooperation is based on the basic characteristics of realism according to Jackson and Sorensen (1999), namely: 1) A pessimistic view of human nature; 2) the belief that international relations begin with conflict and international conflicts are ultimately resolved through war; 3) uphold the values of national security and state survival; 4) Skepticism is the progress of international politics is directly proportional to domestic political life. In line with Dunne and Schmidt (2001) say that there are three essences in the realist school, namely; (1) Statism (relationships between humans in a country and relations between humans in relations between countries are not the same), (2) Survival (sustainability of the state) and (3) Self-help (a condition in which the safety of the state depends on the state itself).

Realism is one of the most dominant and influential schools in international relations (Burhill, 2001). This is in line with the opinion of Dunne and Schmidt (2001) who state that the realism perspective can explain the occurrence of wars between countries. A country will use all its power to maintain the integrity of its country's sovereignty. In the context of efforts to increase air power, the realism approach is very relevant. According to Priyantida (2019), strategic cooperation is distinguished by three components; (1) Strategic cooperation is formed to pursue common strategic goals, which are related to a shared vision of regional security. (2) Strategic cooperation in the form of loose alignment. This allows partners who work together to become competitors among themselves. (3) The strategic partnership is multidimensional and prioritizes developing bilateral relations with short, medium, and long-term visions.

Advances in communication technology have changed the ability of non-state actors to develop and maintain transnational contacts which have proven to be more economical (Josselin & Wallace, 2001a, 2001b; Nye & Keohane, 1981a; Tarrow, 2005:21). The presence of non-state actors in the defense industry greatly helps the role played by the government. The collaboration of state actors with non-state actors expands the agenda of the meetings as the first step in international cooperation in the defense industry. Non-state actors can be

divided into non-territorial non-state actors such as NGOs, multinational companies, and territorial non-state actors such as states in the federal system, regions, and cities (Pluijm, 2007: 8-9). PTDI is a non-state actor with a non-territorial nature. PTDI plays an important role in supporting state aspects of the defense industry. Even so, institutionally subnational, PTDI is state-owned. Political aspects of defense remain the legitimacy of the state. PTDI is a state representative of its involvement, namely sub-national in international relations with ADS.

Heuninckx (2008) states that there are three frameworks or models of international cooperation in the defense industry; (1) Reciprocal trade, in which countries supported by collaboration buy and sell each other defense equipment produced by their collaborating members. (2) Co-production, where the defense industries of countries that develop defense are developed by other collaborating member countries. (3) Co-development, namely where countries that collaborate develop and produce defense equipment. Good cooperation between institutions can be seen from the synergy between actors in supporting the strengthening of the defense sector, this synergy can be carried out between defense institutions and civilian institutions (Djuyandi, Bainus, Sumadinata, 2018).

RESEARCH METHOD

This study uses a qualitative method, the researcher explored, collected, and analyzed data on the phasing process of PTDI's international cooperation with ADS to gain a deep understanding of the phenomenon of cooperation, and the scientific and academic consequences of this phenomenon. Sources of data in this study came from informants through interviews, observation, and documentation. The results of interviews with informants were selected by purposive sampling with the type of expert sampling (informants who have insightful knowledge, experience and are competent in their fields). The informants included the Indonesian Ministry of Defense in Pothan, defense strategy, the Indonesian Ministry of Foreign Affairs which handled foreign relations, the Indonesian Ministry of State-Owned Enterprises (BUMN) in the field of defense and manufacturing industries, the French embassy, ADS representatives in Indonesia, PTDI, Headquarters Indonesian National Armed Forces is part of the logistics assistant for the Army, Air Force, and Navy, as well as defense industry experts.

This study also uses secondary data in the form of written documents and or previous studies. Written documents such as minutes of meeting to formal legal documents from input to output with all the dynamic processes and studies or reports of PTDI product results used by end-users. This research data set focuses on supply and demand, mapping of progress data on PTDI's manufacturing capabilities and capacities, and implementation in the form of amendments or extensions of PTDI's cooperation with ADS, MoU of PTDI's cooperation with ADS (Casa, Eurocopter, Airbus military, and Airbus Helicopter).

RESULT AND DISCUSSION

External and Internal Conditions of PTDI International Cooperation with ADS

PTDI's international defense industry cooperation with ADS as one of the elements in air power is based on bilateral and multilateral cooperation in the defense sector. Bilateral cooperation with France is based on the 1996 MoU between the Indonesian Ministry of Defense and the French Ministry of Defense in the fields of Cooperation in Equipment,

Logistics, and the defense industry. Increasing cooperation is continuously carried out and negotiations are adjusted to global developments related to politics and the economy with the demand to increase capacity and capability, especially in the defense industry. It is proven that the long negotiations in renewing defense cooperation to strengthen the strategic partnership between the two countries were signed in 2011. The renewal continues on Monday, June 28th, 2021, with the signing of the Defense Cooperation Agreement (DCA) by Prabowo Subianto (Indonesian Minister of Defense) and Florence Parly (French Defense Minister). The defense cooperation agreement with France covers the fields of intelligence, military training, and education, science and technology, defense industry, peacekeeping force cooperation, counter-terrorism, and defense industry research and development including joint production. In addition, the agreement also covers humanitarian assistance and handling disasters such as the Covid-19 pandemic.

In line with France, the defense industry cooperation between PTDI and ADS also received support from the Spanish kingdom. This is due to the joining of the Spanish aerospace industry to the Airbus company in the Airbus group, which is strengthened by the cooperation of 23 European Union countries known as the Permanent Structured Cooperation (PESCO). Legal binding in joint defense projects and increasing defense activities and research both internal and external to European Union countries. On February 13th, 2013, in Jakarta, the defense cooperation between the Republic of Indonesia and the Government of the Kingdom of Spain by signing an understanding memorandum on Cooperative Activities in the Field of Defense. The ADS cooperation includes the cooperation of the A400M aircraft, the A330 transport aircraft, and the manufacture of the CN 295 aircraft. The guarantee will not carry out an embargo which is the result of negotiations between the two countries.

Basically, the entry into force of an agreement is divided into two methods, namely (i) The entry into force of an international cooperation agreement since it is signed by the cooperating state parties. Generally certain international agreements with less systemic material, such as the implementation agreement of a larger cooperation, (ii) An international cooperation agreement that does not enter into force immediately from the date of signing. There needs to be a notification that is complied with accordance with the constitutions of the cooperating countries. Within the scope of international cooperation agreements in the defense sector, Indonesia chose the second method because international cooperation in the defense sector is more systemic.

Berridge (2010) said that before the negotiation, pre-negotiation was necessary. The data needed in the pre-negotiation stage is to determine goals, unite perspectives, and coordinate policies. In the pre-negotiation stage, the steps taken according to Bayne are termed preparation, framing, and agenda-setting (Bayne & Woolcock, 2011). The preparation stage consists of internal PTDI elements related to planning, determining common interests through the activity agenda, as well as other supporting elements. This is intended to maximize the benefits of PTDI's international cooperation. Preparation also needs to be done in the form of an in-depth study by mapping problems, potentials, and identification of problems, both internal and external to PTDI. Studies on ADS are also carried out based on formal and informal information. This is very important as PTDI's readiness in determining the exact field to be collaborated with. Several PTDI problems were identified at the preparation stage, namely the application of regulations such as leadership changes at the strategic level. Meanwhile, external problems, including the influence of the

dynamic strategic and economic environment which also influences the government in determining the direction of policy for the development of the defense industry over time deviate. In addition, the weakness of research and development activities carried out by the state is also a problem.

Afterward, the determination of the existence of common interests is a framework (framing) that will become a common agenda before the formal negotiation process is carried out (Bayne & Woolcock, 2011). Within the framework of the agenda, the field of cooperation, as well as the laws and regulations (in this case the aerospace industry regulation) are discussed that support the defense industry cooperation between PTDI and ADS. Negotiation planning also includes the technical implementation of meetings between the parties called agenda-setting. Agenda setting contains procedures and negotiation procedures. According to Paulo (2014), the agenda-setting contains the format of cooperation, the allocation of time needed, the place of negotiation, to the negotiating delegation. Discussions in the planned international cooperation negotiations will continue to discuss: the background; aims, objectives, and targets; the subject of cooperation; object/scope of cooperation; the result of cooperation; sources of financing; and the implementation period while the analysis or study has been discussed in the pre-negotiation.

The factor of PTDI's cooperation with ADS is the background of foreign policy preferences. According to Setiadji (2021), R&D costs and the global spread of technology are also factors for PTDI's collaboration with ADS. Based on the results of an interview with Gitta Amperiawan (the Director of Commerce Technology and Development of PTDI), the factors of research and development of high-security security technology and the spread of modern security technology are following the current pattern of globalization. Since that, the cooperation between Indonesia and Spain has been going on for a long time and the two countries have supported each other at the international level this cooperation in the aircraft industry has played a big role in increasing the cooperation between the PTDI defense industry and ADS. The international cooperation relationship between PTDI's defense industry and ADS, in addition to increasing capacity and capability, is also to obtain deterrence treatment so that Indonesia is recognized in the eyes of the international community.

Before the cooperation agreement, the material in the MoU is included in the proposal to the Ministry of Defense with KKIP along with the detailed cooperation plan. Discussion on the details of the cooperation agreement between PTDI and ADS with the Indonesian House of Representatives to seek approval from the council by issuing a defense industry cooperation law. The DPR RI may reject the cooperation plan and cancel the cooperation plan. Through a meeting between the DPR RI with Intercom and the parties. The finalization is the signing of the law on international cooperation in the defense industry, it can be desk to desk or ceremonial. Based on the explanation above, it can be seen that there are several forms of cooperation carried out such as Letter of Intent, Letter of Friendly, Friendly Ties Cooperation, Joint Declaration, Technical Cooperation Arrangement, and Memorandum of Understanding.

Implementation of PTDI's Defense Industry International Cooperation with ADS

Implementation of cooperation is the process of realizing the decisions that have been made in negotiations based on the understanding of the parties in the form of concrete actions (Dunn, 2000: 404). In the implementation of international cooperation, the defense

industry between PTDI and ADS is classified based on the procurement of partners for the main weapon system. The results of an interview conducted with the Head of KKIP cooperation and marketing, Alex Janangkih, who stated that the benefits obtained in the international defense industry cooperation between PTDI and ADS are almost impossible to match what was previously desired, but the parties involved are still trying maximum profit. For all international cooperation between PTDI's defense industry and ADS, it begins with the procurement of the main weapon system to build Indonesia's air defense force. The existence of the procurement of defense and security equipment tools (Alpalhankam) is based on the Minister of Defense Regulation (Permenhan RI) number 16 of 2019 along with the Minister of Defense of the Republic of Indonesia number 14 of 2020 concerning Amendments to the Minister of Defense number 16 of 2019 regarding the implementation of the procurement of Alpalhankam within the Ministry of Defense and the Indonesian National Armed Forces, that procurement is only limited to purchasing goods/services which focuses on the activities of proposing needs, selecting goods, finding suppliers, negotiating, contract management, purchasing transactions, and limited after-sales assurance.

The development of an air defense force that focuses on procurement certainly has a very large risk, the short-term risk that can occur is that the fulfillment of the desire for the Alpalhankam technical specifications to be purchased often changes, and in the long term is the slow independence of technology and the defense industry. The CN 235 program is the result of a joint design between PT Nurtanio (later IPTN, PTDI) with Spanish CASA (later EADS CASA/Airbus Military), in the form of a Joint Venture company called AIRTECH. The successful implementation of the cooperation began with pre-negotiations during market sharing, PTDI received marketing in the Asia-Pacific region while ADS focused on the European-American region. At the time, CN 235-100 aircraft design technology was modern.

The industrialization process of CN 295 was carried out to fulfill Law number 16 of 2012 and regulations on local content and Offset by PTDI acting as Prime Contractor. The CN 295 industrialization package was agreed upon in the Industrial Collaboration Agreement (ICA) of PTDI with ADS which was signed by the President Director of PTDI and Senior Vice President of Asia-Pacific Airbus Military in December 2011. PTDI was appointed by the government (Kemenhan RI) as a provider of CN 295 aircraft with an allocation period of 40 months (November 16, 2016) gradually.

With the procurement activity, PTDI's bargaining point is to increase cooperation with the existing ADS to increase the capability and capacity of aircraft technology. The similarity in the direction of each country's foreign policy provides a greater level of trust in cooperation between them. For Indonesia in defense industry cooperation with ADS as long as it does not affect each other's domestic affairs and respects each other's foreign policy policies, international defense industry cooperation can be carried out. However, global political economy factors remain the main influence.

In the case of PTDI's cooperation with the Airbus Group with rotary-wing or helicopter capabilities by agreement number EBRB-06-2016 concerning the Commercial Industrial Services Agreement (CISA) which includes industrialization activities in the form of completion/re-assembly, customization, and upgrading at PTDI, as well as PTDI as the main contractor for the sale of helicopters for AH products and services to Indonesian Government institutions. The dynamics of PTDI's collaboration with ADS also show a positive trend, but this is still limited due to the EBRB-06-2016 MoU agreement which limits

sales procurement only within the territory of the Indonesian state. In the end, the capabilities contained in the MoU EBRB-06-2016 were implemented only 50 percent in the context of increasing the capacity of PTDI's AMO 145.

The market structure that occurs in the defense and security world is an oligopoly in which a security and defense commodity is controlled by one or several companies. With limited consumers, the competition is very tight. All the power and efforts of the state are made for the defense industry to progress and develop. The existence of demands and demands in terms of international cooperation in the defense industry makes the procurement cooperation contract in the context of developing air defense forces precede the amendments to the MoU on cooperation between PTDI's defense industry and ADS.

Implementation of PTDI's Defense Industry International Cooperation with ADS

In the process of implementing negotiations, the parties are often negotiating with each other, often decision-makers who facilitate each other to achieve their goals by adjusting each other's policies so that they are in line. This also happened in the negotiations between PTDI and ADS. Adjustment and mutual facilitation do not mean giving in or the occurrence of imbalances in decision-making agreements that result in losses in implementation. Decisions by facilitate mutual interests between cooperating parties are reasonable policies (Keohane, 1988: 380).

It was said in an interview with Alex Janangkih (the Head of Cooperation and Marketing of KKIP) that the benefits gained from international cooperation in the defense industry, especially between PTDI and ADS, are almost impossible to achieve what we want armed "surely measurable according to the abilities and abilities we currently have". However, each party involved wants maximum profit. According to Grieco, the maximum gain (absolute gain) will be difficult to achieve, which is why relative gain is considered and is the achievement of a balanced distribution of profits (Grieco, 1988: 485-501).

All international cooperation between PTDI's defense industry and ADS begins with the procurement of the main weapon system (Alutsista) to build Indonesia's air defense force. This is reflected in the procurement process and the application of regulations carried out by implementing organizations, the cooperation that has been running so far, starting with the purchase of defense equipment as a bargaining power as dominant in the defense industry cooperation. The procurement of Alpalhankam based on the Regulation of the Minister of Defense (Permenhan RI) number 16 of 2019 along with the Minister of Defense of the Republic of Indonesia number 14 of 2020 concerning Amendments to the Minister of Defense number 16 of 2019 regarding the implementation of the procurement of Alpalhankam within the Ministry of Defense and the Indonesian National Armed Forces, it can be concluded that it is only limited to the activities of purchasing goods/services that are focused on the activities of proposing needs, selecting goods, finding suppliers, negotiations, contract management, purchase transactions, and post-sales guarantees which tend to be limited. Limitations in the ToT and offsets because these are included in the contract material in one unit of the budget ceiling.

The development of this procurement-oriented air defense force carries a very large risk. The long-term risk is that technological independence and the defense industry are slow, due to the small scope of offsets and ToTs in the material for cooperation in the procurement of Alpalhankam. Short-term risk is the fulfillment of the desired Alpalhankam technical specifications to be purchased, frequently changing (not by the end user's

operational requirements). With budget constraints, faced with the need for air power to maintain airspace requires a large number of Alpalhankam. The low interoperability and incompatibility of protocols between one system and another addition to the budgetary effort that will be charged to the budget for the coming year.

The dynamics of PTDI's cooperation with ADS show a positive trend. This is indicated by the revitalization of cooperation in terms of support services. The implementation of international cooperation between PTDI's defense industry and ADS is the result of an extension of the MoU that has existed so far. The level of trust provides an amendment to the cooperation, thereby increasing the capability of services support at PTDI. However, the resulting PTDI capacity in terms of maintenance is not yet comparable to the scope of capabilities provided by ADS. One of the reasons is that the MoU EBRB-06-2016 only applies to consumers who are in the territory of the Indonesian state. In this case, the consumers are the Indonesian National Armed Forces, Indonesian National Police, the Indonesian Maritime Security Agency, and National Search and Rescue Agency.

At the same time, the concept of interoperability under the pretext of effectiveness and efficiency in the development and operation of Alutsista (the main Alpalhankam part in the air defense system), reduces the variants/types and technologies used so that not all variants of the type (as evidenced by tables 6.6-6.9) aircraft the air needed in building an air defense force is used. And there is also the scope of services support for the MoU, and the existing capabilities that existed in the MoU before the amendment. In the end, the capabilities contained in the MoU EBRB-06-2016 were implemented only by 50% in the context of increasing the capacity of PTDI's AMO 145. The market structure in the Alpalhankam world is an oligopoly in which an Alpalhankam commodity is controlled by one or several companies. With limited consumers, the competition is very tight.

Benefits and Constraints of International Cooperation

The expectation for cooperation in the defense sector is stated in Law number 16 of 2012 concerning the defense industry Article 48 (4) which states "Foreign cooperation is directed at accelerating the improvement of mastery of defense and security technology and to reduce the cost of developing defense and security technology". Holsti (1995: 362) states that the advantage of cooperation is to improve the economy, namely by reducing the costs that must be borne. Reducing production costs in the expectation of indirectly improving employee welfare. However, according to Zartman and Touval, the benefits obtained are not only material, but also perceptions of progress towards goals, such as increased security, status, or freedom of action for oneself and the imposition of restrictions on other actors (Zartman, 2010: 1-14). Cooperation with non-material goals dominates PTDI's goal of collaborating with ADS. ToT and offsets in mastering technology to increase PTDI's capability and capacity.

The most significant benefit of PTDI's collaboration with ADS is that there are wide-open job opportunities in the academic realm. There were several vocational high schools and vocational academies in the field of aviation after the collaboration was established. In addition, the competence of employees increases, and they even become teachers in various vocational schools. Then, supported by the increase in PTDI's capability and capacity to make work free and production to increase along with the increase in human resources in the aviation sector PTDI has the indirect authorization to advance the defense industry from upstream to downstream.

Within eight years, PTDI was IPTN that could produce 15 CN235-100 aircraft. The flight performance of the CN235-100 aircraft is efficient, and low operating and maintenance costs with a turboprop configuration has 2 passenger doors and a cargo and ramp door that allows fast and effective loading and unloading of goods and people for military use. Then PTDI's cooperation with the Airbus military is more likely to be commercial activities. Tooling rejuvenation, special tooling obtained from the sharing market in collaboration with Airbus Helicopter.

In the international defense industry cooperation systems approach and concept, it shows that the success of cooperation is influenced by the consistency of the actors of cooperation in carrying out the stages and procedures of international cooperation because international cooperation in the defense industry is essentially a gradual, multi-level and interrelated system. PTDI's international cooperation with ADS before the reform had significant implications compared to after the reform. PTDI's international cooperation with ADS has implications for the seriousness of non-state actors to build and develop PTDI. Domestic cooperation with supporting and private supporting industries is increasing. Service companies are also involved so that the absorption of labor also increases.

The increase in human resources in terms of build quality and quantity also has implications for PTDI's independent development in the N250 design program that uses fly-by-wire technology. The involvement of national state actors dominates the policy direction of international cooperation in the defense industry and involves the government at the central level. This means that international cooperation in the defense industry between PTDI and ADS at the policy level is a political decision. Leaders of countries issue policies towards other countries by cooperating or by conflict. For the Indonesian state to maintain its physical identity, the state chooses to cooperate internationally. After the 1999 reform, the international cooperation between PTDI's defense industry and ADS has not had any implications for the development of air defense forces. This means that developing air defense forces has implications for increasing PTDI's capability and capacity.

The problems and challenges that arise include; (1) the requirements in the monetary restructuring agreement by the IMF, providing solutions to PTDI as the main contractor in the procurement of defense equipment. (2) The government's responsibility in managing the state asset recovery program in the form of State-owned enterprise (BUMN) becomes complex. (3) The discontinuation of PTDI's post-reform industrial activities as a structured transition within the framework of internal improvement. (4) The large cost of developing technology is faced with a defense budget that is also not small. To improve cooperation and the sustainability of PTDI's existence, it is necessary to take strategic steps, namely; (1) Efforts to improve performance through optimizing incentives. (2) Restructuring in the restructuring of maturing corporate bonds to balance and reduce future fiscal pressures. (3) Reassessment of each facility, asset, and various costs. (4) Improving MRO capability.

Hoping that the seriousness of national state actors is needed to be able to; (1) Maximize support, as well as the role of the Indonesian Ministry of Foreign Affairs, Defense Attache, or related parties (play an active role in business forum activities for the targeted country, open opportunities for international cooperation in the defense industry, become a marketer for the aerospace industry, and build trust and positive brand image to potential customer countries). (2) Strengthening defense cooperation both bilaterally, regionally, and multilaterally with a broad context that can give Indonesia access to facilities to other countries, such as (a) Maximizing defense cooperation with the ASEAN Defense Ministers

Meeting Retreat (ADMM), (b) Participating in as well as in the ADMM Expert Working Group Forum, (c) Exchange Views on official visits to certain countries. (3) Support for working capital/buyer's credit schemes through the National Interest Account (NIA) program.

There are several forms of participation of non-state actors in international cooperation, such as information sharing, consultation, decision making, initiation, and control by stakeholders. Non-state actors who can participate in international cooperation include communities and community organizations, academics and researchers, politicians and political parties, mass media, private companies, national and international consultants, donor agencies, private companies, and various other public institutions. The forms of participation of non-state actors in international cooperation in the defense industry include providing ideas or thoughts, executing programs, responding to programs or rejecting programs offered. At the stage of designing cooperation, the form of public participation can be marked in the form of consultation with community representatives and uniting their views in the formulation of a cooperation design. This was done in preparation for negotiations for international cooperation between PTDI and KAI of South Korea.

A common problem that often arises in international cooperation in the defense industry is that cooperation is not implemented properly so that it does not have an impact on the parties involved in cooperation. The validation of regulations and procedures applied at PTDI creates obstacles in efforts to increase PTDI's capability and capacity. Detailed and in-depth thinking during coordination and discussion of negotiation activities should be suspected of a stagnant implementation of cooperation as a result of the agreement. The suitability of the competence and qualifications of personnel and sitting in negotiating delegations is a factor that causes an imbalance in negotiating discussions in terms of rights and obligations of international cooperation. Unpreparedness in determining the fields to collaborate also shows that the PTDI negotiator team has not comprehensively understood the potential of PTDI with all its dynamics. The psychological aspect of seniority in positions in the internal negotiator team can also be an obstacle. This is an obstacle due to the high dynamics of implementing data analysis in pre-negotiation activities. In the end, the perpetrators of the pre-negotiation activities of each party validated data and information with authentic documents.

Constraints that become barriers to pre-negotiation are also found in determining the framing. There is a similarity in the nomenclature of the regulations used, but the updated different regulations are a separate obstacle in continuing the steps to negotiations. The validity of the regulations used can be communicated earlier so that the areas to collaborate can be maximized. An understanding of regulations will make the negotiation stage smoother. Then at the negotiation stage, differences in the priority of the cooperation program between PTDI and ADS were influenced by the disagreements of the parties that ultimately affected the course of negotiations.

In the implementation process, the defense industry cooperation between PTDI and Airbus Helicopter is that there is authorization and under-license granted to PTDI by Airbus Helicopter which is passive because the population of this type of aircraft does not yet exist or is still small in the Asia-Pacific region. The difference in management between PTDI and ADS implements the defense industry cooperation plan is often hampered.

CONCLUSION

International cooperation in the defense industry between PTDI and ADS is an activity that describes a gradual and interrelated system. The international cooperation between PTDI's defense industry and ADS forms a system that must be carried out correctly at every stage, starting with input and ending with output. The pre-negotiation stage is a consolidation and initial coordination step before entering the negotiation stage. The international defense industry cooperation between PTDI and ADS shows a tendency, namely; increasing capability and capacity, cooperation that has not been able to increase capability and capacity in manufacturing. PTDI's cooperation with ADS in the field of rotary-wing has not shown a significant increase in capability. In terms of international cooperation with the defense industry, obstacles still often occur due to the lack of understanding regarding the level of capability of the domestic defense industry and differences in regulations between companies. In addition, differences in work program objectives and leadership changes are obstacles.

This study suggests that in the process of international cooperation between PTDI and ADS, it is necessary to involve the Indonesian State Defense Attaché in the defense industry cooperation process from input to output so that the detailed discussion of demands and requests for valid information relevant to the cooperation in question. The need for the involvement of the domestic defense industry can develop defense industry cooperation in supporting PTDI as a lead integrator. The involvement of the supporting and supporting defense industries helps the development of the domestic defense industry, and in the future, the defense industry clustering can be balanced in fulfilling PTDI's capacity. As well as the need to evaluate international cooperation regularly to find out whether the cooperation carried out is beneficial or not with the aim of feedback in deciding on international cooperation in the defense industry to continue and develop cooperation.

References

- Balakrishnan, Kogila, Bitzinger, R. A. (2012). Asean Defence Industrial Collaboration: Getting to Yes. *International Journal*, 67906982, 2.
- Bayne, N., & Woolcock, S. (2011). The new economic diplomacy: Decision-making and negotiation in international economic relations. In *Technology in Society*. <https://doi.org/10.5860/choice.49-5182>
- Buzan, B., & Wæver, O. (2003). Regions and Powers. In *International Politics*. <https://doi.org/10.1017/cbo9780511491252>
- Calcara, A. (2018). Cooperation and conflict in the European defence-industrial field: the role of relative gains. *Defence Studies*, 18(4), 474–497. <https://doi.org/10.1080/14702436.2018.1487766>
- Creasey, P., & May, S. (1988). *The European Armaments Market and Procurement Cooperation*. In Palgrave Macmillan; 1st ed. https://doi.org/10.1007/978-1-349-10024-8_1
- Dilahwangsa, Z., Bhakti, I. N., & Pedrason, R. (2019). Asean Defense Industry Collaboration (ADIC) as Medium of Defense Diplomacy of Asean Member Countries. *Diplomasi Pertahanan*, 5, 1–28.
- Djuyandi, Y., Bainus, A., & Sumadinata, W.S. (2018). Synergy Between Regional Command Unit of

- Indonesian National Army (Tni Ad) and Local Government in Encouraging the Spirit of State Defense. *Central European Journal of International & Security Studies*, 12(4), 127-143.
- Easton, D. (1957). *An Approach to the Analysis of Political Systems*. *World Politics*. <https://doi.org/10.2307/2008920>
- Herbert, A. L. (1996). Cooperation in International Relations: A Comparison of Keohane, Haas and Franck. *Berkeley Journal of International Law*, 14(1), 222-236.
- Kantaprawira, R. (2004). *Sistem Politik Indonesia*. In Bandung: Sinar Baru Algensindo.
- Kaufman, G. (1985). Politicians and the media. *Parliamentary Affairs*. <https://doi.org/10.1093/oxfordjournals.pa.a051997>
- Keohane, R. O. (1984). After hegemony: Cooperation and discord in the world political economy. *After Hegemony: Cooperation and Discord in the World Political Economy*, January 1984, 1-290. <https://doi.org/10.2307/40202461>
- Ningsih. (2017). Kerjasama Asean Defence Industry Collaboration untuk Menentukan Platform Persenjataan. *International and Diplomacy*, 3(1), 21.
- Ningsih, N. S. (2019). Hambatan yang Dihadapi ASEAN Defense Industry Collaboration (ADIC) dalam Menentukan Platform Persenjataannya. *Jurnal Hubungan Internasional*, 12(1), 115-134. <https://doi.org/10.20473/jhi.v12i1.4765>
- Rittberger, V., Zangl, B., Kruck, A., Rittberger, V., Zangl, B., & Kruck, A. (2012). Theories of International Organizations. In *International Organization*. https://doi.org/10.1007/978-0-230-36408-0_2
- Salsabiela, B. F. (2016). Analisis of Technology Acquisitions of Indonesia Defence Industry: A Case Study of Jet Fighter Development of KFX/IFX. *Journal Pertahanan*, 6(1), 51-74.
- Wezeman, P. d., Fleurant, A., Kuimova, A., Silva, D. lopes da, Tian, N., & Wezeman, S. t. (2020). *SIPRI Fact Sheet - Trends in International Arms Transfers, 2019*. SIPRI Publications.
- Wie, T. K. (2005). The major channels of international technology transfer to Indonesia: An assessment. *Journal of the Asia Pacific Economy*. <https://doi.org/10.1080/13547860500071493>
- Yogaswara. (2011). Strategi Percepatan Penguasaan Teknologi dan Industri Pertahanan: Studi Korea Selatan. *Defendonesia*, 11(1), 1-9.
- Zartman, I., & Touval, S. (Eds.). (2010). *International Cooperation: The Extents and Limits of Multilateralism*. Cambridge: Cambridge University Press. doi:10.1017/CBO9780511761119